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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/731,374

12/09/2003

Marc Schaepkens

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10/17/2005

GENERAL ELECTRIC COMPANY

GLOBAL RESEARCH

PATENT DOCKET RM. BLDG. K1-4A59

NISKAYUNA, NY 12309

EXAMINER

TUROCZY, DAVID P

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/731,374

Applicant(s)

SCHAEPKENS, MARC

Examiner

David Turocy

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-49 is/are pending in the application.
- 4a) Of the above claim(s) 49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 35-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/5/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The applicant's amendments, filed 7/29/2005, have been fully considered and reviewed by the examiner. The examiner notes the amendments to the specification (update status) and the drawings (including prior art label) and therefore the objections to each have been withdrawn. Claims 38-49 remain pending with claim 49 withdrawn pursuant a restriction requirement.

Response to Arguments

2. Applicant's arguments with respect to US Patent 6397776 have been fully considered and are persuasive. The examiner notes the showing of common ownership of the subject matter of US Patent 6397776, which only qualifies as prior art under 35 USC 102(e), and the present invention and therefore US Patent 6397776 can not properly be applied as "prior art". Therefore, the 35 USC 103(a) rejection to the claims has been withdrawn.

The examiner notes the applicant's request to address the provisional obvious double patenting rejection upon finding of patentable subject matter, since the claim subject matter is still pending the provisional obvious double patenting rejection will be maintained till such a time.

Specification

3. The disclosure is objected to because of the following informalities:

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4. Page 7 of the specification refers to an incomplete applications number

"09/_____".

5. The attempt to incorporate subject matter into this application by reference to [09/681820] and [09/_____] is improper because there is no recitation that the application is commonly assigned. Reliance on a commonly assigned copending application by a different inventor may ordinarily be made for the purpose of completing the disclosure. See *In re Fried* , 329 F.2d 323, 141 USPQ 27, (CCPA 1964), and *General Electric Co. v. Brenner* , 407 F.2d 1258, 159 USPQ 335 (D.C. Cir 1968).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6294227 by Anma et al., hereafter Anma in view of Japanese Patent 62253634 by Fukuhara et al., hereafter Fukuhara.

Amna teaches of forming a coating on a non-planar substrate (Figures, abstract). Amna discloses coating automotive parts using by providing a non-planar substrate in an evacuated chamber, generating a plasma within the chamber, injecting at least one reactant gas into the plasma, where both the reactant gas and plasmas are directed towards the substrate and reacted to form a coating (Figures, Column 1, lines 27-35, Column 3-Column 4).

Amna fails to disclose providing an array of plasmas where the first flow rate into a first plasma is different from a second flow rate into a second plasma.

However, Fukuhara, teaching of a method of uniformly treating a non-planar substrate, for example automotive parts, using a plasma, discloses supplying a reactant gas through a control valve to a plurality of shower head injectors and then subsequently reacted to form a plasma (abstract). Fukuhara discloses independently controlling the flow rate to each of the reactant gas injectors depending on configuration of the substrate relative to the plasma position, thereby making the gas flow rate per unit area uniform therefore providing homogeneous plasma processing over the entire substrate surface (abstract, Page 3, Translation). Fukuhara discloses providing an array of plasma sources, rather than a single source, allows for plasma processing of substrates with areas difficult to treat (Page 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Amna to use the array of plasma sources and control reactant flow rates as suggested by Fukuhara to provide a desirable uniform coating on a non-planar substrate with a reasonable expectation of success because Fukuhara

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discloses controlling the reactant gas flow to each of the plasma guns is known in the art to provide uniform reactant flow rates per unit of area of the non-planar substrate and therefore would reasonably be expected to effectively provide a uniform plasma coating on a non-planar substrate.

8. Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Anna in view Fukuhara and further in view of US Patent 5120568 by Schuurmans et al., hereafter Schuurmans.

Anna in view of Fukuhara teaches all the limitations of these claims as discussed in the 35 USC 103(a) rejection above, however, they fail to teach of using atleast one expanding thermal plasma source.

However, Schuurmans teaches of a method of treating a surface with plasma discloses providing plasma with separate sections for generating plasma and substrate treatment by expanding a thermal plasma into the deposition chamber (Column 1, lines 34-66). Schuurmans discloses the expanding thermal plasma source has a cathode, an anode, and a non-reactive plasma source gas disposed in a plasma chamber (Figures). Schuurmans discloses such an expanding thermal plasma results in increased deposition rate relative to a conventional plasma (Column 1, lines 23-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Anna in view of Fukuhara to use the expanding thermal plasma as suggested by Schuurmans, with a reasonable expectation of success, to reap the benefits of increase deposition rate during the plasma coating of a substrate.

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9. Claims 38-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amna in view of Fukuhara and further in view of Japanese Patent Abstract 63187619 by Mochizuki, hereafter Mochizuki.

Amna in view of Fukuhara fails to disclose passing the reagents to a reagent gas injector, which directs the reagents through a plurality of orifices into each of the plurality of plasmas.

However, Muchizuki teaches a plasma process system including a gas distribution plate comprising a plurality of orifices (abstract). Muchizuki discloses in Fig 1b, the orifices are provided with less in the central region of the substrate and more orifices in the peripheral region (abstract). In another embodiment, the gas distribution plate is provided with smaller holes in the central region and larger holes in the peripheral region, where the larger holes inherently have a different conductance than the smaller holes (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Amna in view of Fukuhara to implement the gas distribution injector arrangement as taught by Muchizuki in order to form a homogeneous film over the surface of the substrate.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

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unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 35-48 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 32-43 of copending Application No. 10/626253 in view of Fukuhara. Claims 32-43 of the copending application teach all the limitations set forth by claims 35-48 of the present invention, except teaching of controlling gas flow rates to each of the plurality of plasmas to coating a non-planar substrate. However, Fukahara, as discussed above, teaches of controlling the reactant gas flow rates during plasma coating to uniformly coat a non-planar substrate. Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to modify the copending application to control the flow rates of the reactants, resulting in varying flow rates of reactants, to provide a desirable uniform coating on a non-planar substrate. Such a modification to claims 32-43 of the copending application would have been obvious to one ordinary in the art and thus claims 35-48 of the present invention is obvious variants to the copending claims.

This is a provisional obviousness-type double patenting rejection.

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Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Turocy
AU 1762


TIMOTHY MEESKS
SUPERVISORY PATENT EXAMINER